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Filed 9/12/2003
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REMARKS

Objection to the specification

The Examiner has objected to the title of the specification as not being descriptive. Applicant has amended the title to include the phase "employing SUM signal," so that the title now reads "Optical disc drive focusing apparatus employing SUM signal." Applicant submits that the title is descriptive as amended, because all embodiments of the invention employ such a SUM signal to achieve focusing. As such, the withdrawal of this objection is requested.

Claim rejections under 35 USC 112

Claims 10-11 and 24-25 have been rejected under 35 USC 112, second paragraph, as being indefinite. Claims 10 and 24 have been rejected as being indefinite because they do not define the claimed terms A0, A1, A2, B1, B2, DC0, QS1, QS2, QC1, and QC2. Applicant has amended these claims to define these terms as follows: "A0, A1, A2, B1, and B2 are the coefficients generated by the coefficient generator; QS1, QS2, QC1, and QC2 are sinusoidal or cosinusoidal terms; and, DC0 is a nominal voltage level." Support for this amendment is found in the patent application as filed at least in paragraphs [0043], [0044], and [0047]. Applicant thus requests the withdrawal of this rejection.

Claims 11 and 25 have been rejected as being indefinite because the claims do not define functions Wk or terms Mu and Ek, where for Wk in particular, the Examiner is uncertain whether Wk is the actual control signal, or a separate signal. Applicant has amended these claims to define these terms as follows, in the particular case of claim 11: "the actuator control signal generator is configured to generate a control signal according to $Wk(\text{new}) = Wk(\text{old}) - (Mu * Ek)$, where Wk is the control signal, Ek is an error term and Mu is an adaptation coefficient." As such, it is clear that Wk in particular is the control signal that is generated. Support for this amendment is found in the patent application as filed at least in paragraphs [0044], [0048], and [0052], and

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in claim 25 prior to amendment (i.e., as originally filed, and thus being part of the originally filed specification).

Claim rejections under 35 USC 102

Claims 1, 4, 8, 11-14, 16, 20, 25-27, 29, 35, 37, 38, 39, and 46-48 have been rejected under 35 USC 102(b) as being anticipated by Faucett (2002/0089906). Claims 1, 16, 29, and 39 are independent claims, from which the remaining claims rejected on this basis ultimately depend. Applicant submits that the independent claims are patentable over Faucett, such that all the claims rejected on this basis are patentable.

Applicant discusses claim 1 as representative of all the independent claims insofar as patentability over Faucett is concerned. With respect to the SUM signal data limitation of the claimed invention, the Examiner has indicated that paragraph [0015] of Faucett discloses this limitation. In particular, the Examiner notes that paragraph [0015] of Faucett discloses the sampling and digitization of a signal from a quad-detector, and concludes that this signal "is presumably a SUM signal." (Office action, p. 4, para. 5)

Applicant respectfully disagrees with the Examiner's presumption in this respect. First, Applicant has amended the claimed invention so that it is clear what the SUM signal data is. It "represent[s] a summation of values from a plurality of focus sensors, and is different than a focus error signal (FES) representing a difference between a sum of the values from a first subset of the focus sensors and a sum of the values from a second subset of the focus sensors." Support for this amendment is found in the patent application as filed at least in paragraph [0019].

Applicant thus submits that the sampling and digitization of a signal from a quad-detector in Faucett does not disclose, teach, or suggest the SUM signal data of the claimed invention, which represents a summation of values from a plurality of focus sensors. Faucett is absent in its disclosure as to how it samples and digitizes the signal from its detector, and does not indicate that it discloses the generation of a SUM signal as is particularly defined in the claimed invention.

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Therefore, on its face, Faucett cannot be considered as explicitly disclosing this aspect of the claimed invention, such that it cannot be considered as anticipating the claimed invention.

Furthermore, Faucett's sampling and digitizing of a signal from its quad-detector cannot be considered as inherently disclosing SUM signal data representing the summation of values from a plurality of focus sensors as in the claimed invention. The inherency requirement specifies that "inherency . . . may not be established by probabilities or possibilities"; indeed, "the mere fact that a certain thing may result from a given set of circumstances is not sufficient." (In re Oelrich, 666 F.2d 578, 581, 212 USPQ 323, 326 (CCPA 1981)) Here, Faucett's sampling and digitizing of a signal is at best just as likely to result in SUM signal data as it is in a FES representing the difference between the sum of the values from a first subset of the sensors of the quad detector and the sum of the values from a second subset of these sensors. As such, the possibility that Faucett may generate SUM signal data does not lead to the fact that Faucett does indeed generate SUM signal data. Absent explicit disclosure to the contrary, Faucett cannot be considered as inherently disclosing SUM signal data as in the claimed invention, and therefore cannot be considered as anticipating the claimed invention.

In fact, if anything, Faucett's utilization of a signal from a quad-detector is more than likely the conventional FES, as can be appreciated by those of ordinary skill within the art. Faucett makes quick reference to the signal sampled from the quad-detector, without further description, which would lead one of ordinary skill within the art to believe that Faucett is using its quad-detector in a conventional manner, and not in the novel manner of the claimed invention. The conventional manner of using a quad-detector is to generate a FES. As stated in the background of the patent application as filed:

When reading or writing data to the data side of a CD, conventional use of FES (focus error signal) provides information that allows operation of a closed-loop feedback circuit to keep the optical pickup unit (OPU) focused on the data pits defined on an upper surface of a plastic layer. . . . Unfortunately, conventional use of a FES to focus on the label side of the disk is ineffective.

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(Paras. [0002]-[0003]) By comparison, one novel aspect of the claimed invention is that quad-focus sensors can be employed to generate SUM signal data as well as an FES. "The output of the quad sensors may be used to form both the FES (focus error signal) and the SUM signal." (Para. [0019]) The SUM signal is particularly used so that focusing can be achieved on the label side of the optical disc. (See, e.g., paras. [0007], [0018], [0021], [0023], [0035], and [0061] of the patent application as filed) This is why the claimed invention uses a SUM signal, as opposed to an FES, in at least one embodiment thereof.

By comparison, Faucett does not disclose the necessity or indeed even the ability to focus on the label side of an optical disc. Rather, it is concerned with standard compact disc (CD) media, like CD-read only memory (CD-ROM) and digital versatile disc (DVD) media, on which data is stored on the data sides of such media. (See, e.g., para. [0004] of Faucett) No mention is made anywhere within Faucett as to the focusing on the label side of such optical media. Therefore, one of ordinary skill within the art is much more likely to interpret Faucett's usage of quad-detector output as providing an FES, as is conventional and is typically achieved with reading and writing to the data sides of such conventional optical discs. It is highly unlikely that one of ordinary skill within the art would interpret Faucett's usage of a quad-detector output as providing a SUM signal as in the claimed invention, insofar as such a SUM signal is not needed to focus on the data sides of conventional optical media, and Faucett does not disclose the focusing on the label side of optical media.

For all of these reasons, therefore, Faucett cannot be considered as anticipating (nor rendering obvious) the claimed invention, which is limited to a SUM signal particularly defined, and explicitly indicated as being different than an FES. Faucett does not provide any explicit disclosure as to the particular definition of a SUM signal as explicitly recited within the claimed invention. Faucett does not inherently disclose such a SUM signal, and indeed more likely inherently discloses a conventional FES. Because Faucett is concerned with data written to and read from optical media, there is no reason to modify Faucett to use a SUM signal instead of an

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FES, when doing so is plainly not needed to achieve Faucett's goals – and indeed, where the only disclosure of such a novel SUM signal is presented in the disclosure of the present patent application as originally filed.

Claim rejections under 35 USC 103

Claims 2, 17, 19, 22, 30, 40, and 43 have been rejected under 35 USC 103(a) as being unpatentable over Faucett in view of Honda (2002/0191517). These claims are dependent claims ultimately depending from independent claims rejected under 35 USC 102 in view of Faucett alone, as discussed above, and therefore are patentable at least because they depend from patentable independent claims.

Claims 10, 24, 34, and 45 have been rejected under 35 USC 103(a) as being unpatentable over Hajjar (5,742,573). Applicant believes, however, that the Examiner intended to reject these claims over Faucett in view of Hajjar, since they are dependent claims ultimately depending from independent claims rejected under 35 USC 102 in view of Faucett alone, as discussed above. That is, the Examiner has not shown how Hajjar in particular includes all the limitations of their base independent claims, as would be required if these dependent claims were rejected over Hajjar alone. In any case, these claims are patentable at least because they ultimately depend from patentable independent claims.

Claims 15, 28, 36, and 49 have been rejected under 35 USC 103(a) as being unpatentable over Hajjar in view of Kadlec (6,813,226). Applicant believes here as well that the Examiner intended to reject these claims over Faucett in view of Hajjar and further in view of Kadlec, since they are dependent claims ultimately depending from independent claims rejected under 35 USC 102 in view of Faucett alone, as discussed above. That is, the Examiner has not shown how Hajjar in view of Kadlec in particular includes all the limitations of their base independent claims, as would be required if these dependent claims were rejected over Hajjar in view of

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Kadlec alone. In any case, these claims are patentable at least because they ultimately depend from patentable independent claims.

Claim objections (allowed claims)

Claims 5-7, 18, 21, 31, 32, 41, and 42 have been objected to as containing allowable subject matter, but which depend from a rejection based claim. Applicant thanks the Examiner for the conditional allowance of these claims.

Conclusion

Applicants have made a diligent effort to place the pending claims in condition for allowance, and request that they so be allowed. However, should there remain unresolved issues that require adverse action, it is respectfully requested that the Examiner telephone Mike Dryja, Applicants' Attorney, at 425-427-5094, so that such issues may be resolved as expeditiously as possible. For these reasons, this application is now considered to be in condition for allowance and such action is earnestly solicited.

Respectfully Submitted,



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Date

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